Central California Coast Steelhead

Hatchery Program Assessment

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Central California Coast Steelhead ESU

- CCC steelhead included in the ESU
  - Don Clausen Fish Hatchery program, California Department of Fish & Game
  - Kingfisher Flat Hatchery program, Monterey Bay Salmon and Trout Project
  - And other natural populations with no hatchery programs
- CCC steelhead NOT included in the ESU
  - None

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Population area (hatchery stock)	Isolated or integrated	Program type	Purpose	Production goal	Years of Program
Artificial Propagation Programs that Produce Fish Included in ESU					
Russian River (Don Clausen)	Isolated	Smolt	Mitigation	500,000	24
Scott Creek (Kingfisher Flat)	Integrated	Smolt	Restoration	variable	22

Viable Salmon Populations

Abundance
Productivity
Spatial Structure
Diversity

Effect on Abundance

- Don Clausen steelhead have been on the increase for several years. Many return to the hatchery or are caught in the recreational fishery. Some hatchery fish may be contributing to steelhead abundance.
- There is natural spawning and rearing in the Russian River system, but steelhead abundance has not been documented for most streams in the ESU.
- Recent genetic analysis on Don Clausen steelhead and Russian River steelhead place both within the same metapopulation, possibly representing native Russian River stock (more analysis needed).

- It is not known if the MBSTP steelhead program increases CCC steelhead abundance in the southernmost part of their range.

Effect on Productivity

- There is likely some contribution to ESU productivity from Don Clausen steelhead, based on the genetic relationship with the natural population.
- Natural steelhead have been observed spawning and rearing in the Russian River system. YOY and age 1+ fish have been documented in surveys on Sheephouse and Green Valley creeks.
- The contribution of hatchery steelhead productivity relative to natural productivity is unknown.
- Steelhead are depressed in the southern range of ESU. The previous MBSTP steelhead program was designed to product steelhead for a recreational fishery and not for supplementing natural productivity.

Effect on Spatial Structure

- Hatchery steelhead have not extended spatial structure in the Russian River system, but have increased fish density within the spatial distribution.
- Natural steelhead occupy all major tributaries and most of the smaller ones to the Russian River; natural and hatchery juveniles have been found in the mainstem. A good amount of steelhead still habitat remains within the system.
- All natural (unclipped) steelhead entering the hatchery are returned to Dry Creek.
- It does not appear that the former MBSTP program improved CCC steelhead spatial distribution in the southern range of the ESU.

Effect on Diversity

- There is no benefit from the current hatchery steelhead programs to population or ESU diversity.
- Don Clausen Fish Hatchery does not incorporate unclipped steelhead into its hatchery program.

- MBSTP uses a small number of wild steelhead for limited propagation. This minimizes domestication effects but there may be a negative impact to the depressed population by removal of any number of fish.

Effect of Artificial Propagation on VSP Attributes Central California Coast Steelhead

Viability Criteria	BRT VSP Risk Score	Decreases Risk	Neutral or Uncertain	Increases Risk
Abundance	3.9	√		
Productivity	3.9		√	
Spatial Structure	3.6		√	
Diversity	2.8		√	

Recommendation: No Change to BRT's Finding

What is the biological status of the ESU in total (including hatchery stocks/populations, mixed populations, and natural populations)?

CCC Steelhead	Biological Status for the ESU in-total		
	"in danger of extinction throughout all or a significant portion of its range"	"likely to become endangered within the foreseeable future throughout all or a significant portion of its range"	Neither "in danger of extinction…" or "likely to become endangered…"
BRT's findings for the ESU natural components	25%	69%	6%
Workshop consensus finding			